Center for Profitable Uses of Agricultural Byproducts

Utah State University

Conly L. Hansen, PhD – PI

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Bio-Waste Treatment Systems

(Induced Blanket Reactor)

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Induced Blanket Reactor (patent pending)

Treats animal and food processing waste to:

- Reduce solids
- Capture greenhouse gas emissions
- Control odors
- Kill pathogens
- Concentrate nutrients
- Produce renewable energy (methane – natural gas)
- Create nutrient rich by-products

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IBR Advantages

- 5 day processing vs. 20-30 days
  - Less space/storage required
  - Lower installed cost
- Lower energy consumption
- Better methane quality 70%+ vs. 50-60%
- Modular/scaleable
- Higher reliability (passive, non-plugging design)

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Andigen, LC

- Licensee (from USU) for IBR Technology
- Partnership (LLC)
- Funding through grants, SBIR's, system prepayments
- Design and install pre-engineered treatment systems
- Provide system management services

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Key Management Team Members

- **Ed Watts – Managing Director**
  - 25 years managing manufacturing, product development and marketing
- **Conly Hansen – Principal Scientist**
  - 30+ years in anaerobic digestion, IBR inventor recognized nationally as leading authority
- **Carl Hansen – Industry/Customer Relations**
  - Research engineer with over 30 years in agriculture, IBR co-inventor
- **Kevin Pack – Installations Manager**
  - Licensed contractor, 6 years experience in anaerobic digestion facilities

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Mission

To provide farmers and food processors with reliable, cost effective effluent treatment systems to enhance the value and minimize the environmental impact of organic waste streams

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Why Do They Care?

- **Increased pressure to reduce environmental impacts**
- They need cost effective, reliable systems to process waste streams
- Renewable energy from digesters can pay for the solution

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The Market Potential

$7-10 Billion

- CAFO's only (1,000 animal units +)
  - Dairy Cows, Hogs and Cattle only
- Food processing included only as supplemental to CAFO's
- US only

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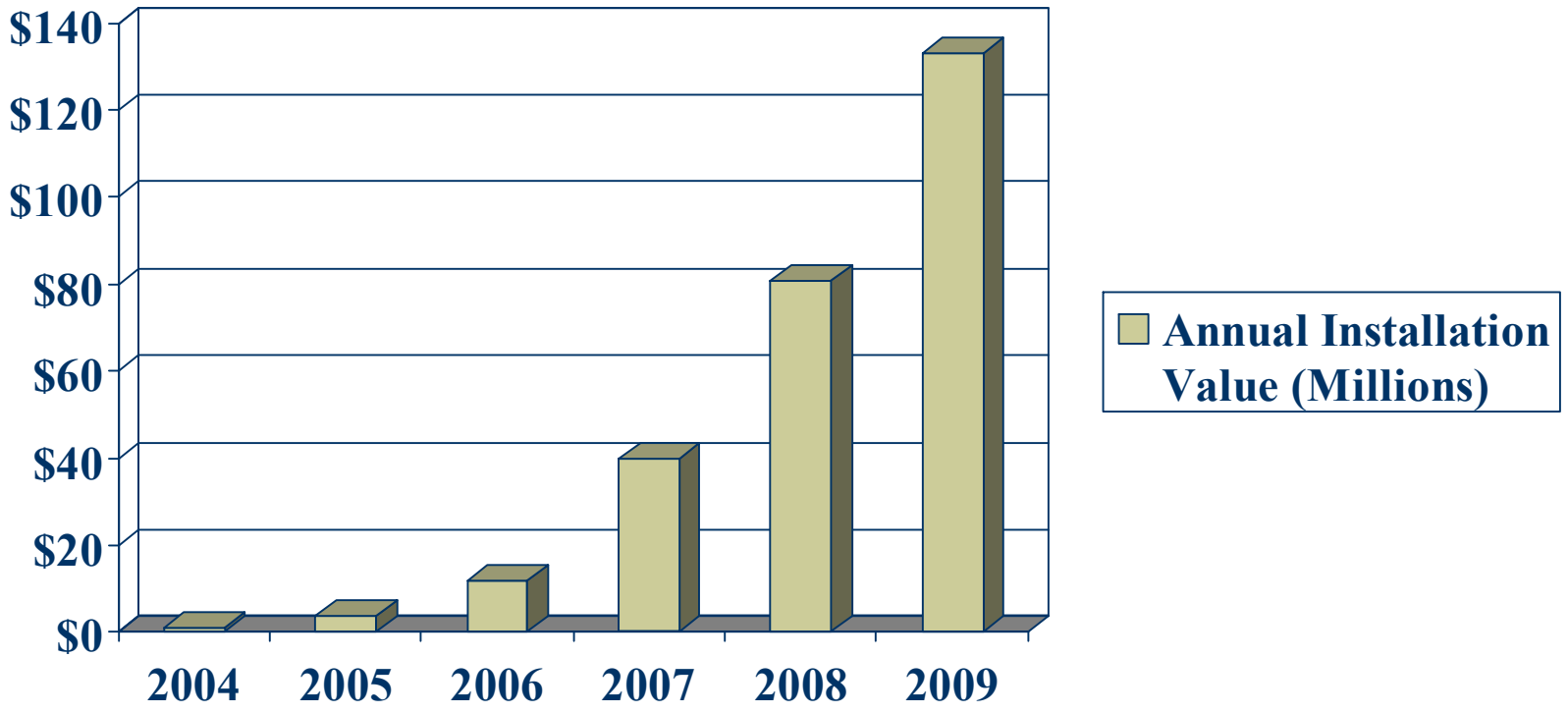
$140
$120
$100
$80
$60
$40
$20
$0
2004
2005
2006
2007
2008
2009
Annual Installation Value (Millions)

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Market History (Digester Baggage)

- Systems are expensive
- Lack of ongoing support once installed
- Systems underachieve
- Systems fail

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Our Strategy

- Start with a superior (best in class) product
- **Prove it!** (Model homes in key markets)
- Use value-add partners
- Assist farmers with financing, grants, regulations
- Support digester operations

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More Strategy

- Invest in research and ongoing product development/product expansion
- Use partnerships in key markets for rapid growth
  - Become US industry volume/cost leader by 2006
- Develop non-equity financing partnerships

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Intellectual Property Position

- IBR patent in approval stage
- CIP in progress
- New patent application started
- Exclusive rights
- Access to key scientists
- Ongoing research and research sponsorship